



# THE SCIENCE OF TEAM SCIENCE: AN INTRODUCTION

ESIL Team Science Training Series #4

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May 15<sup>th</sup>, 2026 at the University of Minnesota

# WHAT IS TEAM SCIENCE?

National Cancer Institute/NIH:

“Team science is a collaborative effort to address a scientific challenge that leverages the strengths and expertise of professionals, oftentimes trained in different fields.”

From the recent NASEM 2025 report:

“It is important to note the term “team science” is often applied ambiguously. It sometimes refers to the narrow study of science teams, at other times refers to the broader study of teams across disciplines and contexts, and can also refer to the conduct of science by teams.”

Put more simply it is the study of teams that also uses insights to better facilitate and design teams to improve a variety of outcomes.

# WHAT IS TEAM SCIENCE?

Leveraging skills and tools to improve collaboration such as decision-making, psychological safety, etc.

Practice

Science

Empirical studies of team dynamics, effects of size, diversity, affiliation, gender, etc.

Undergraduate courses on leadership, professional development, NIH toolkits, etc.

Education

Training

Often consultation or facilitation; training on team norms, how to collaborate, etc.

# WHY DO WE CARE?

- The better our collaboration, the better our:
  - Science
  - Interventions
  - Recommendations
  - Outcomes
  - Inclusivity
  - Creativity
  - Impact



# BECOMING A BETTER COLLABORATOR

## Communication and Active Listening

- Sharing ideas clearly
- Asking good questions
- Listening across disciplines
- Attending to assumptions

## Role Clarity and Expectations

- Communicating who is responsible for what
- How decisions will be made
- What each team member is contributing

## Trust, Psychological Safety, and Respect

- Creating an environment where people feel comfortable sharing ideas, raising concerns, admitting uncertainty, and giving feedback

# BECOMING A BETTER COLLABORATOR

## Conflict Management and Constructive Disagreement

- Knowing how to navigate differences in priorities, methods, timelines, authorship, or interpretation without damaging relationships

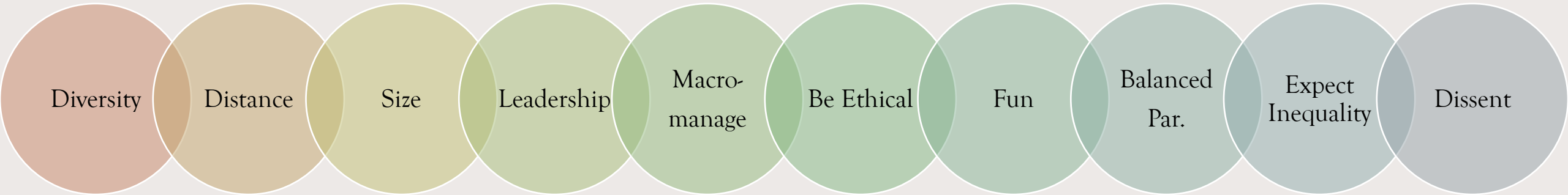
## Interdisciplinary Integration

- Bridging different disciplinary languages, methods, theories, and standards so the team can produce work that is more than the sum of its parts

## Equity, Credit, and Shared Accountability

- Ensuring fair participation
- Transparent recognition
- Responsible authorship practices
- Mutual accountability for the team's goals

# 10 RULES FOR COLLABORATION



# RESOURCES: BECOMING A BETTER COLLABORATOR

## **Collaboration & Team Science: A Field Guide (NIH)**

A practical guide for researchers who want to work more effectively as team members or leaders.

→ <https://doresearch.stanford.edu/stanford-research-development-office/writing-your-proposal/general-grant-preparation-tips-resources/resources-for-collaboration-team-science>

## **Collaboration Agreement Template (Bennett et al., 2022)**

A useful worksheet for making expectations explicit early.

→ <https://zenodo.org/records/6394789>

## **Team Science Community Toolkit / COALESCE**

A set of downloadable tools, templates, and learning modules that can help individuals and organizations understand team-based research practices and collaboration.

→ <https://www.teamscience.net/home/resources>



# RESOURCES: BECOMING A BETTER TEAM

## **Enhancing the Effectiveness of Team Science – NASEM 2015**

A foundational evidence-based report on team composition, leadership, professional development, management, and institutional supports for science teams.

→ <https://www.nationalacademies.org/projects/DBASSE-BBCSS-12-05/publication/19007>

## **The Science and Practice of Team Science –NASEM 2025**

A newer update focused on modern team science, including virtual and hybrid collaboration, team charters, psychological safety, communication strategies, project management, and evaluation.

→ <https://www.ncbi.nlm.nih.gov/books/NBK615760/>

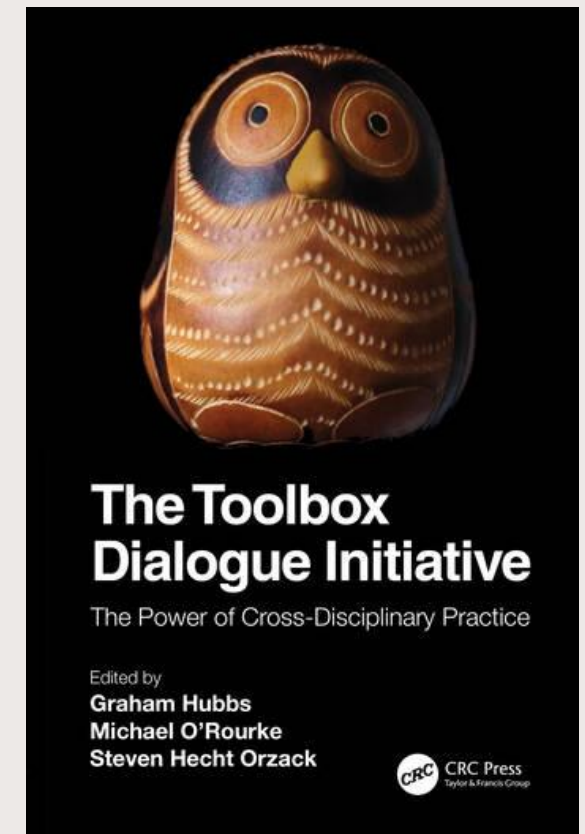
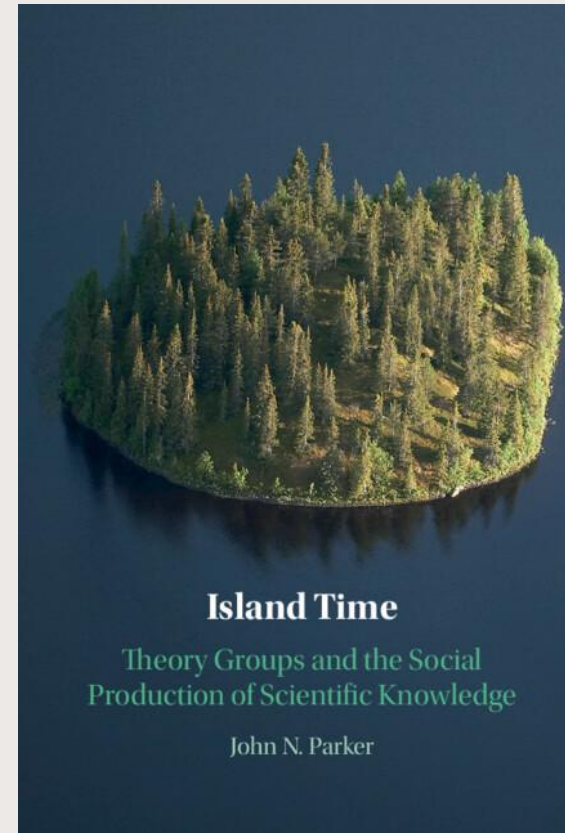
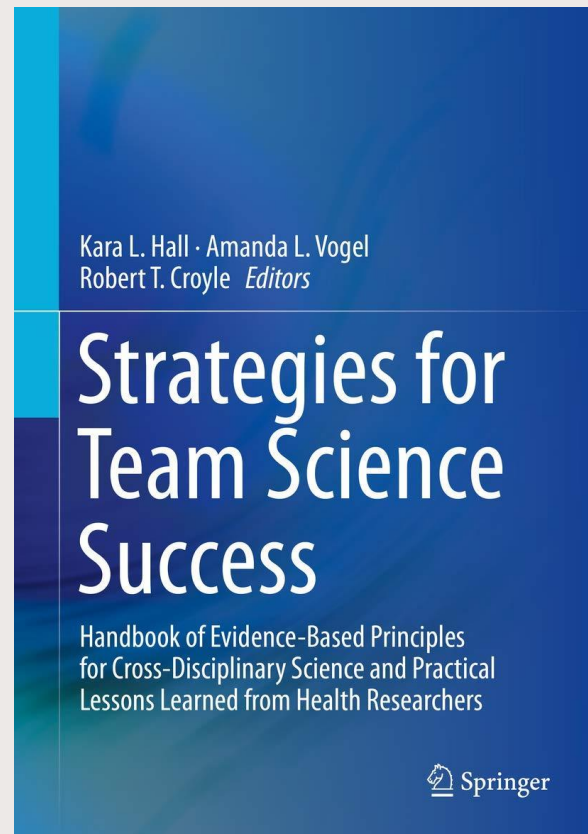
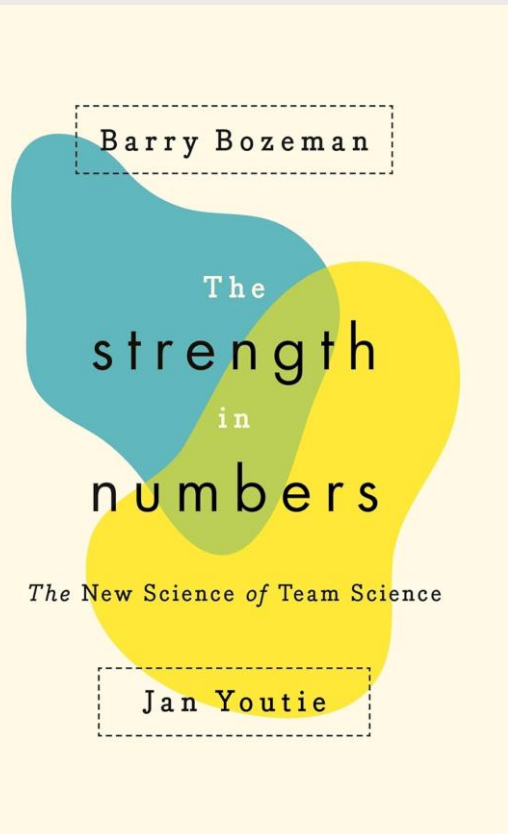
## **International Network for the Science of Team Science (INSciTS)**

→ <https://inscits.org/>

## **The Toolbox Dialogue Initiative @ MSU**

→ <https://tdi.msu.edu/>

# BOOKS



Q & A

